



First record of the Spinner Dolphin *Stenella longirostris longirostris* (Cetacea: Delphinidae) for Kosrae, Micronesia

Floyd E. Hayes, Brandon J. Painter

Department of Biology, Pacific Union College, Angwin, CA 94508, USA.

Corresponding author: Floyd E. Hayes, floyd_hayes@yahoo.com

Abstract

The Spinner Dolphin *Stenella longirostris longirostris* (Gray, 1828) has been reported from most of the island groups from Micronesia, except for Kosrae. On 25 June 2014 we observed a pod of about 10 dolphins at Molsron Yela, Kosrae. Our photos of the dolphins confirm their identity as *S. l. longirostris*, based on the extremely long and slender snout combined with the tricolored pattern of a dark gray cape, gray sides, and white belly. This provides the first documented record for Kosrae.

Key words

Marine mammals; geographic distribution; range extension; Pacific Ocean.

Academic editor: Alexandra Fernandes Costa | Received 30 January 2017 | Accepted 24 May 2017 | Published 11 July 2017

Citation: Hayes FE, Painter BJ (2017) First record of the Spinner Dolphin *Stenella longirostris longirostris* (Cetacea: Delphinidae) for Kosrae, Micronesia. Check List 13 (4): 31–34. <https://doi.org/10.15560/13.4.31>

Introduction

Marine mammals are frequently observed in Micronesia, yet few are positively identified and even fewer are reported in the scientific literature, especially from islands seldom visited by biologists (Eldredge 1991, Wiles 2005). The Spinner Dolphin *Stenella longirostris* (Gray, 1828) has a pantropical distribution and is represented by 4 subspecies, of which 1 occurs in coastal southeast Asia (*S. l. roseiventris*), 2 occur in the tropical eastern Pacific Ocean (*S. l. orientalis* and *S. l. centroamericana* along coastal Central America), and 1 is pantropical (*S. l. longirostris*) (Perrin and Gilpatrick 1994, Reeves et al. 2002, Perrin et al. 2007, Perrin 2009). Its conservation status is currently regarded as ‘data deficient’ (Bearzi et al. 2012). In Micronesia, *S. longirostris* has been previously reported from most of the major island groups, including Palau, Yap, Guam, the Northern Marianas,

Chuuk, Pohnpei, and the Marshall Islands (e.g. Miyazaki and Wada 1978, Gilpatrick et al. 1987, Eldredge 1991, Eldredge 2003, Stinson 1994, Trianni and Kessler 2002, Fulling et al. 2011, McNulty 2013), but not from Kosrae (Fig. 1). In this note we report the first confirmed record of *S. l. longirostris* for Kosrae, which is the easternmost high island in Micronesia (Fig. 2).

Methods

While residing in Kosrae from 27 August 1981 to 1 January 1982 and from 15 January to 21 May 1982, the first author (FEH) observed 61 unidentified dolphins along the coast during the months of August, September, February, and March. They occurred in pairs or small pods. A pod of 15 was observed closely from a small motorboat west of Tafunsak on 12 October 1981.

The first author (FEH) returned to Kosrae during

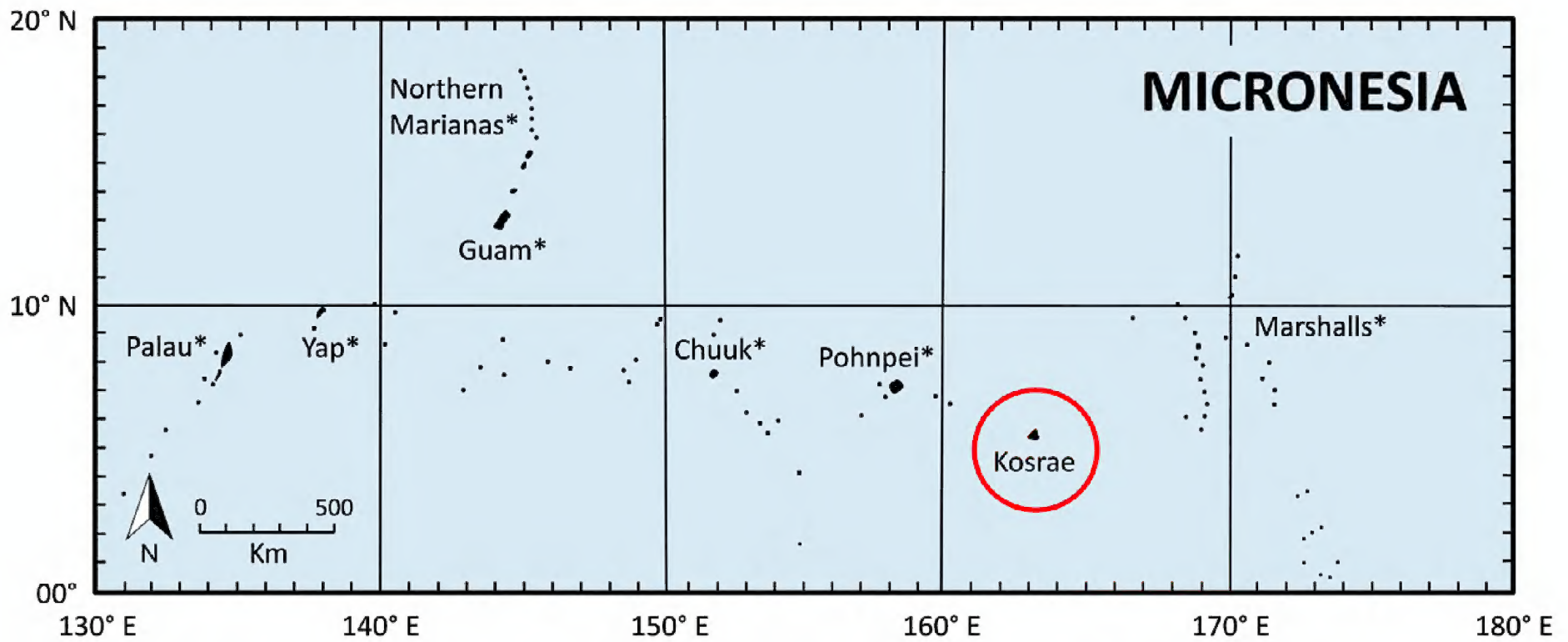


Figure 1. Map of Micronesia. Major island groups for which Spinner Dolphin *Stenella longirostris longirostris* has been recorded (Wiles 2005) are indicated with an asterisk and the new record for Kosrae is circled.

18–28 June 2013 and, with the second author (BJP), during 17–27 June 2014. Despite several trips by motorboat along the coast while scuba diving, snorkeling, and searching for fruit bats, we observed dolphins only once. On 25 June 2014, a small pod of dolphins approached our small motorboat as we traveled along the northwest coast of Kosrae near Molsron Yela (05.34° N, 162.93° E; datum WGS84), between Okat Harbor and Walung (Fig. 2). FEH obtained a photograph of the dorsal half

of a dolphin surfacing beside the boat (Fig. 3). During a snorkeling dive, BJP observed about 10 dolphins before they swam away and obtained a grainy underwater photograph revealing 4 dolphins (Fig. 4).

Results

The dolphins observed on 12 October 1981 possessed uniformly dark backs and whitish sides, which are con-

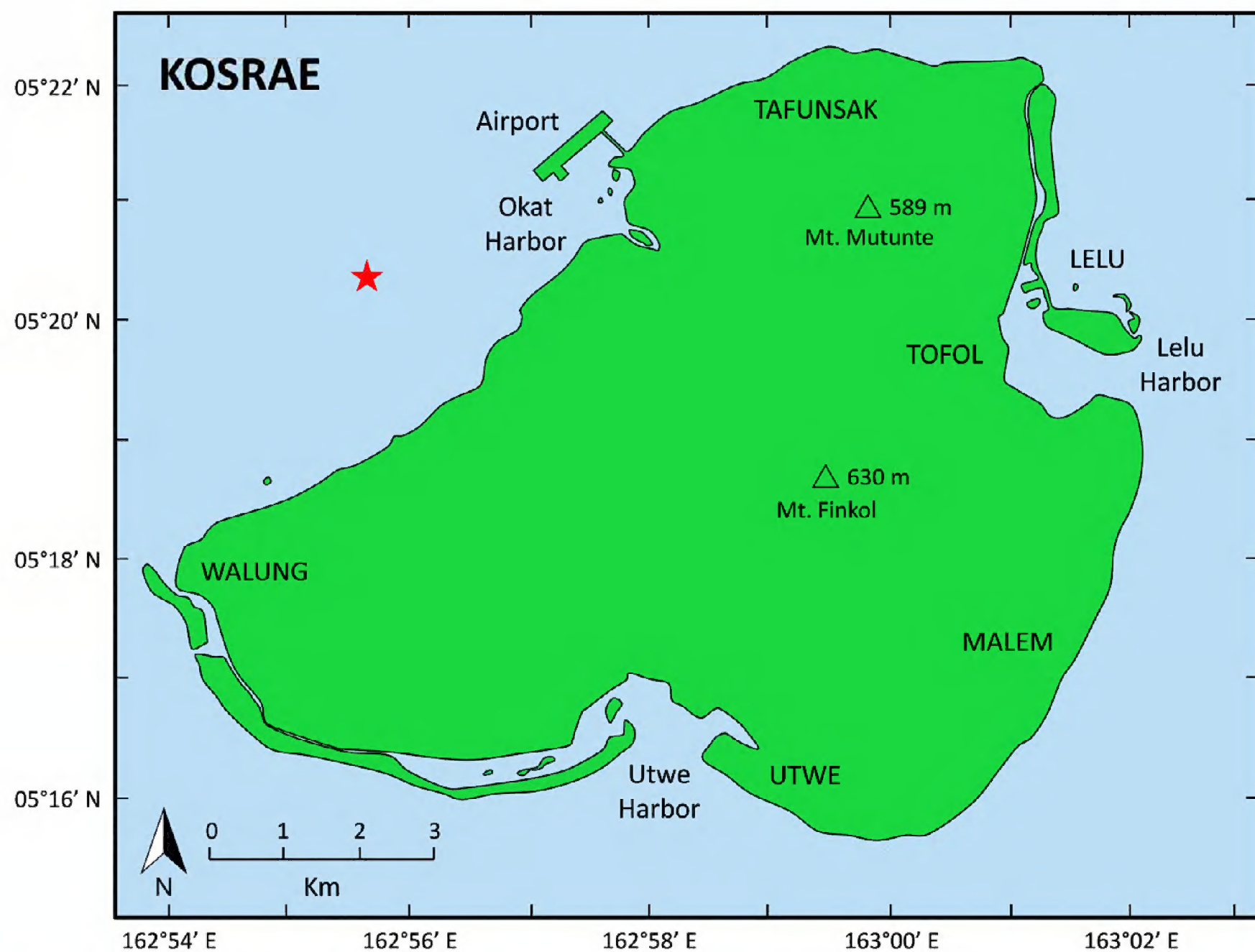


Figure 2. Map of Kosrae, Micronesia, with a star indicating the locality of Spinner Dolphins *Stenella longirostris longirostris* photographed at Molsron Yela on 25 June 2014.



Figure 3. Dorsal view of a surfacing Spinner Dolphin *Stenella longirostris longirostris* at Molsron Yela, Kosrae, on 25 June 2014. Photo by Floyd E. Hayes.

sistent with *S. longirostris*. Our photos of the dolphins on 25 June 2014 confirm their identity as *S. longirostris* based on the extremely long and slender snout combined with the tricolored pattern of a dark gray cape, gray sides, and white belly. The tricolored pattern is typical of the nominate subspecies *S. l. longirostris* of the western Pacific (present in Micronesia) and the smaller subspecies *S. l. roseiventris* (restricted to southeast Asia), and differs from the more monochrome gray of the two eastern Pacific subspecies *S. l. orientalis* and *S. l. centroamericana* (Perrin 1990, Perrin 2009, Jefferson et al. 1993, Perrin and Gilpatrick 1994, Reeves et al. 2002, Perrin et al. 2007). The lack of spotting distinguishes this species from the Pantropical Spotted Dolphin *Stenella attenuata* (Gray, 1846) (Jefferson et al. 1993, Reeves et al. 2002), which is widely distributed in Micronesia

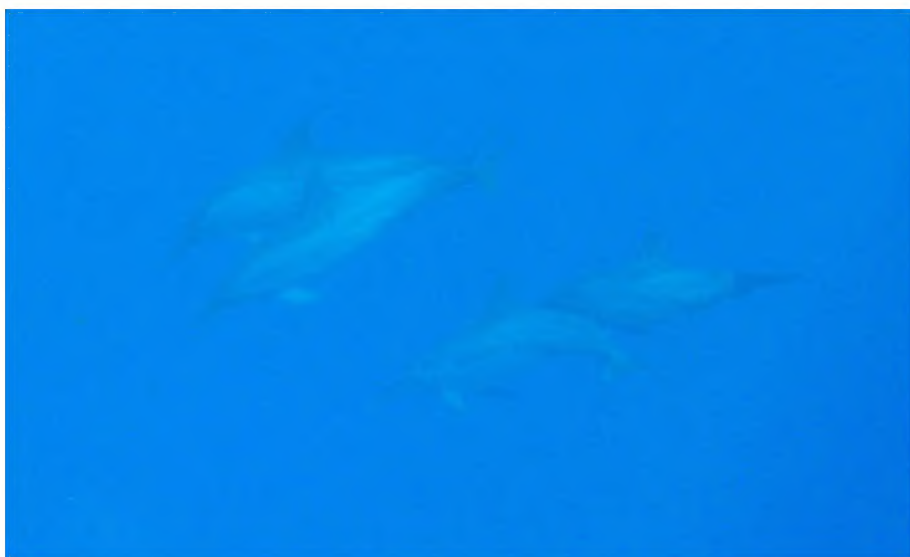


Figure 4. Lateral view of 4 Spinner Dolphins *Stenella longirostris longirostris* underwater at Molsron Yela, Kosrae, on 25 June 2014, illustrating the long snout and tricolored pattern. Photo by Brandon J. Painter.

(Wiles 2005) and has been previously reported from Kosrae (Gilpatrick et al. 1987). The lack of a pale stripe from the eye to the dorsal fin, which would be obvious if present in Figure 3, distinguishes it from the Striped Dolphin *Stenella coeruleoalba* (Meyen, 1833) (Jefferson et al. 1993, Reeves et al. 2002), which has been recorded elsewhere in Micronesia (Wiles 2005). Other small delphinids recorded from Micronesia (Wiles 2005) include the Rough-toothed Dolphin *Steno bredanensis* G. Cuvier in Lesson, 1828, which has a similar color pattern but a shorter snout, and the Fraser's Dolphin *Lagenodelphis hosei* Fraser, 1956, which has a stubby snout and a black lateral stripe (Jefferson et al. 1993, Reeves et al. 2002).

Discussion

Although our observations represent the first confirmed record of *S.l. longirostris* for Kosrae, we suspect 1 or more small pods routinely visit the coast, which is seldom visited by professional biologists with expertise in identifying marine mammals. Other species of marine mammals reported from Kosrae include the Sperm Whale *Physeter macrocephalus* Linnaeus, 1758 (Eldredge 1991), *S. attenuata* (Gilpatrick et al. 1987), Melon-headed Whale *Peponocephala electra* (Gray, 1846) (Bachman et al. 2014), and Killer Whale *Orcinus orca* (Linnaeus, 1758) (Iwashita et al. 1963).

Because Kosrae is a small, rugged, and isolated island with a historically low human population density (Gorenflo 1993), its marine environment remains relatively pristine, yet there are many emerging threats to marine ecosystems which, unless mitigated, may adversely affect

marine mammals (George et al. 2008, Wortel 2010). Further observations will undoubtedly add more species to the marine mammal fauna of Kosrae and studies should be undertaken to document patterns of abundance, seasonality, and long-term population trends.

Acknowledgements

Our field work in Kosrae was funded by the Faculty Development Fund, a Herber Family Faculty Development Grant, and the Margaret Huse Biology Faculty Research Fund from Pacific Union College. We thank W. Tara for providing logistical assistance in Kosrae. This research project was approved by the Faculty Research and Development Committee of Pacific Union College and it complied with the current laws of the Federated States of Micronesia.

Authors' Contributions

FEH and BJP observed the dolphins and took photographs. FEH wrote the text.

References

- Bachman MJ, Keller JM, West KL, Jensen BA (2014) Persistent organic pollutant concentrations in blubber of 16 species of cetaceans stranded in the Pacific Islands from 1997 through 2011. *Science of the Total Environment* 488–489: 115–123. <https://doi.org/10.1016/j.scitotenv.2014.04.073>
- Bearzi G, Bjørge A, Forney KA, Hammond PS, Karkzmarski L, Kasuya T, Perrin WF, Scott MD, Wang JY, Wells RS, Wilson B (2012) *Stenella longirostris*. The IUCN Red List of Threatened Species 2012. <https://doi.org/10.2305/iucn.uk.2012.rlts.t20733a17837287.en>
- Eldredge LG (1991) Annotated checklist of the marine mammals of Micronesia. *Micronesica* 24 (2): 217–230.
- Eldredge LG (2003) The marine reptiles and mammals of Guam. *Micronesica* 35–36: 653–660.
- Fulling GL, Thorson PH, Rivers J (2011) Distribution and abundance estimates for cetaceans in the waters off Guam and the Commonwealth of the Northern Mariana Islands. *Pacific Science* 65 (3): 321–343. <http://doi.org/10.2984/65.3.321>
- George A, Luckymis M, Palik S, Adams K, Joseph E, Mathias D, Malakai S, Nakayama MR, Graham C, Rikim K, Marcus A, Albert J, Fread V, Hasurmai M, Fillmed C, Kostka W, Takesy A, Leberer T, Slingsby S (2008) The state of coral reef ecosystems of the Federated States of Micronesia. In: Waddell JE, and Clarke, AM (Eds) NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team, Silver Spring, Maryland, 419–436.
- Gilpatrick JW Jr, Perrin WF, Leatherwood S, Shiroma L (1987) Summary of distribution records of the Spinner Dolphin, *Stenella longirostris*, and the Pantropical Spotted Dolphin, *S. attenuata*, from the western Pacific Ocean, Indian Ocean and Red Sea. National Oceanic and Atmospheric Administration Technical Memorandum NMFS-SWFC-89. U.S. Department of Commerce, San Diego, California, 42 pp.
- Gorenflo LJ (1993) Demographic change in Kosrae State, Federated States of Micronesia. *Pacific Studies* 16 (2): 67–118.
- Iwashita M, Inoue M, Iwasaki Y (1963) On the distribution of *Orcinus* in the northern and southern Pacific equatorial waters as observed from reports on *Orcinus* predation. *Bulletin of the Fisheries Research Laboratory of Tokai University* 1 (1): 24–30.
- Jefferson TA, Leatherwood S, Webber MA (1993) *Marine Mammals of the World*. United Nations Environment Programme, Food and Agriculture Organization of the United Nations, Rome, 320 pp.
- McNulty RW (2013) Marine mammal monitoring on Guam. *Oregon Undergraduate Research Journal* 4 (1): 54–72. <https://doi.org/10.5399/uo/ourj.4.1.3161>
- Miyazaki N, Wada S (1978) Observation of Cetacea during whale marking cruise in the western tropical Pacific, 1976. *Scientific Reports of the Whales Research Institute* 30: 179–195.
- Perrin WF (1990) Subspecies of *Stenella longirostris* (Mammalia, Cetacea, Delphinidae). *Proceedings of the Biological Society of Washington* 103 (2): 453–463.
- Perrin WF (2009) Spinner Dolphin *Stenella longirostris*. In: Perrin WF, Würsig B, Thewissen JGM (Eds) *Encyclopedia of Marine Mammals*, 2nd Edition. Academic Press, San Diego, 1174–1177.
- Perrin, W.F., M.T. Aquino, M.L. Dolar and M.N.R. Alava (2007) External appearance of the Dwarf Spinner Dolphin *Stenella longirostris roseiventris*. *Marine Mammal Science* 23 (2): 464–467. <https://doi.org/10.1111/j.1748-7692.2007.00117.x>
- Perrin WF, Gilpatrick JW Jr (1994) Spinner Dolphin *Stenella longirostris* (Gray, 1828). In: Ridgway SH, Harrison R (Eds) *Handbook of Marine Mammals: The First Book of Dolphins*. London: Academic Press, London, 99–128.
- Reeves RR, Stewart BS, Clapham PJ, Powell JA (2002) *National Audubon Society Guide to Marine Mammals of the World*. Alfred A. Knopf, New York, 527 pp.
- Stinson DW (1994) Birds and mammals recorded from the Mariana Islands. In: Asakura A, Furuki T (Eds) *Biological Expedition to the Northern Mariana Islands, Micronesia*. Natural History Research, special issue no. 1, Natural History Museum and Institute, Chiba, Japan, 334–344.
- Trianni MS, Kessler CC (2002) Incidence and strandings of the Spinner Dolphin, *Stenella longirostris*, in Saipan Lagoon. *Micronesica* 34 (2): 249–260.
- Wiles GJ (2005) A checklist of the birds and mammals of Micronesia. *Micronesica* 38 (1): 141–189.
- Wortel OL (2010) Federated States of Micronesia Fourth National Report: Implementation of Article 6 of the Convention on Biological Diversity. United Nations Environmental Programme, New York, 192 pp.